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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/949,988 10/14/97 YUNG

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PATENT DOCKET ADMINISTRATION  
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EXAMINER

DINH, T

ART UNIT

PAPER NUMBER

3644

20

DATE MAILED:

11/13/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	Application No. 08/949,988	Applicant(s) Yung et al
	Examiner T. Dinh	Group Art Unit 3644

Responsive to communication(s) filed on \_\_\_\_\_.

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

Claim(s) 1-19 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-19 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Draim in view of Westerlund, Uphoff, or Dulck.

Draim discloses that a satellite constellations covering a specific geographical area but is silent on the tilting the trajectory to reorient the constellations to cover a second coverage. However, Westerlund teaches that tilting satellites to “reorient” the satellite constellation to cover various geographical areas are well known in the art. In addition, Dulck discloses that modifying the trajectory of the orbit 04 by “tilting” is well known in the art (see figure 3 also see figure 2). Furthermore, Uphoff discloses that various tiltings of the satellite trajectory to accomplish certain missions are well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have tilted the trajectory of certain satellite(s) in the constellations of Draim as taught by Westerlund, Uphoff, or Dulck to maximize the coverage area of the desired geographical area.

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As for the determining the "period of rotation" and determining the time coverage of the constellation based on the period of rotation and the trajectory of the desired satellite, please note that these are inherent steps that one skilled in the art would take so that the desired positions of the satellite can be accomplished to prevent the satellite from being lost and to maximize the coverage.

As for the programming of the computers on the satellite or sending command signals to the satellite and using simulations, please note that in today's day and age, these topics are well known to be used in the aerospace field.

As for the equations and the rotation matrices, please note that these are basic, inherent equations that one skilled in the art would have used to determine the period of rotations.

As for the new limitation of a "second coverage based on the time dependent coverage....", please note that when a second coverage is desired by tilting the trajectories of the satellites, the relative orbit of the satellite with respect to each other is not changed since the tilt of the orbits of each satellite mirror each other. Also, the second coverage based on the time dependent coverage is an inherent step that one skilled in the art would have utilized so that the satellite can provide maximum coverage at certain times and locations. Satellites are expensive items therefore, one skilled in the art would have used inherent, rational steps to ensure that the satellite correctly do its job.

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*Response to Amendment*

In response to applicant's argument concerning the Westerlund reference, please see the figures 5 and 7A. It clearly shows that by tilting the orbits of the satellite, it is inherent that certain coverage is accomplished. The Examiner used the Westerlund reference to show that "tilting" the orbits is well known to one skilled in the art. This clearly leads one skilled in the art to modify Draim's orbits as taught by Westerlund to cover certain geographical area.

As for the argument on none of the prior art teaches "the second coverage providing maximum satellite coverage...during peak hours", please note that the claims do not call for "peak hours." This renders the argument moot.

*Conclusion*

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tien Dinh whose telephone number is (703) 308-2798. The examiner can normally be reached on Monday thru Friday from 8 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Poon, can be reached on (703) 308-2574.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1113.

*Charles T. Jordan*  
Charles T. Jordan  
Supervisory Patent Examiner  
Group 3600

T. Dinh

November 8, 2000